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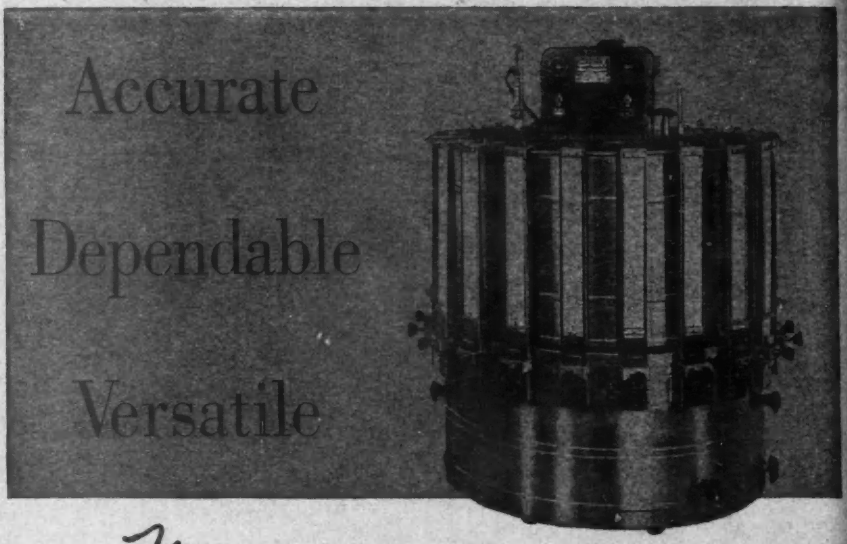

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The Place of Health Departments in Civil Defence

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THE progress of a country can be shown in the care and nurture of its people. In Canada we have come a long way in providing the individual with a background of health services, safety laws, fire protection, police organization, and financial assistance in times of stress. Each year new advances have been made in these fields, and Canadians can be proud of a solid, basic framework of service which stretches across the country and provides them with as high a standard of living as any country in the world.

In the last few years, however, new dangers have threatened our way of life. On the one hand, we have war fears. The vision of long-range bombers from distant points flying over Canada and dropping bombs with devastating results, or of guided missiles from submarines or surface craft creating havoc in our coastal cities, is no longer an impossibility. On the other hand, major misfortunes have been occurring with increasing rapidity in many countries, including Canada. Disasters such as floods, fires, and explosions have brought death, destruction, and confusion to many areas. It is these dangers in war and peace which have given birth to the necessity for an active, purposeful, and permanent civil defence program.

Civil defence comprises all measures taken to minimize the effects of disasters. It is an organized effort to protect Canada's civil population from the results of enemy action should war occur and, at the same time, to form a bulwark against disasters in peacetime. It is this *dual* application of civil defence which I wish to impress upon you—the need for disaster services in both peace and war.

Presented before a general session at the fortieth annual meeting of the Canadian Public Health Association, held in the Fort Garry Hotel, Winnipeg, June 16–18, 1952.

Civil Defence—a Continuing Responsibility

The Minister of National Health and Welfare, in an address to the Canadian Federation of Mayors and Reeves in June, 1951, said: "From this time forward civil defence is a part of the civic duty of every citizen. We now recognize that the threat of war might continue, as the Minister of National Defence has emphasized, not for a few years only but for a generation. As long as there is a danger of war, there must be preparation to protect civilians against it."

Dr. C. H. Best, Chairman, Medical Advisory Panels, Defence Research Board, refers to the four services—Army, Navy, Air Force, and *Civil Defence*—thus emphasizing the importance of industrial preparedness and the home front in modern warfare.

These opinions stress the need for a continuing service to meet a war emergency and, if one accepts the peacetime application of civil defence, it serves to emphasize the importance of a permanent civil defence organization. This does not mean that, at the present state of emergency, large forces need be mobilized, but rather that nucleus units should be organized, trained, and equipped to meet emergency situations. These groups could be rapidly expanded to form a full-scale civil defence organization should the need arise.

Basic Concepts of the Civil Defence Program

First, the organization should be built on the existing framework of civil government; second, existing facilities and agencies should be strengthened and used whenever possible. These basic principles have been applied in developing civil defence at all levels in Canada.

Civil Defence Organization in Canada, with Particular Reference to Health Services

Federal Organization

At the Federal level (Figure 1), civil defence was first established as a section in the Department of National Defence and later moved to the Department of National Health and Welfare. The Co-ordinator for Civil Defence is responsible, through the Deputy Ministers, to the Minister of National Health and Welfare. He is advised on civil defence matters by a Civil Defence Co-ordinating Committee, with representatives from various Government departments and agencies with an interest in the civil defence program. The Civil Defence Co-ordinator is advised on health matters by the Civil Defence Health Planning Group of the Department. This group is concerned with initiating and co-ordinating civil defence health service plans at the federal level and with developing a general pattern to serve as a guide to provincial and local planners. In developing this program, the active support of the various professional associations and voluntary agencies has been obtained. They have nominated representatives to working parties dealing with problems in which they have a direct interest. Similarly, several Federal organizations have assisted with this planning.

Provincial Organization (Figure 2)

The provinces, in each case, have designated a Cabinet minister as the minister responsible for civil defence. They have also appointed a civil defence co-ordinator

and a civil defence co-ordinating committee. The provincial co-ordinator is advised on health matters by the deputy minister of health or an officer named by the deputy minister to assume this responsibility. Health service advisory committees have been established at provincial level, with representatives of the various professional associations and voluntary agencies concerned with health serving as members on these committees.

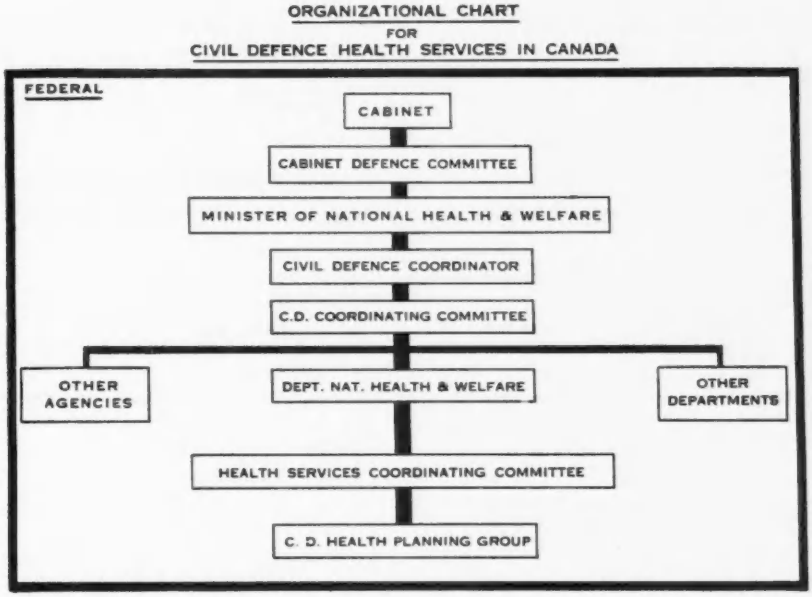

FIGURE 1

Local Organization

At the local level (Figure 2), municipal governments have the direct responsibility for civil defence and health departments play a major role in the development of local civil defence health services. Advisory health committees have been organized in many communities to obtain the support of professional and voluntary groups.

Local Planning Vital to Success

It should be emphasized that disasters produce a direct local effect and the immediate measures taken to minimize the results must stem from local effort. Support can be provided from surrounding communities and more distant sources, but the initial response of an efficient local organization will be a vital factor in limiting the damage and providing early relief for disaster victims.

Certain communities may be designated as target areas, but this does not guarantee that disaster will not strike in other areas. Further, shortages of professional health service personnel in Canada and essential facilities such as

hospitals make it imperative for us to develop a uniform plan of action for the country as a whole. This program must be based on sound local planning, with a total mobilization of local resources of personnel, facilities, and equipment. Deficits should be determined and plans formulated to supplement resources from other areas. The program should be flexible so that it will meet a disaster situation in the community concerned or provide support for another devastated area.

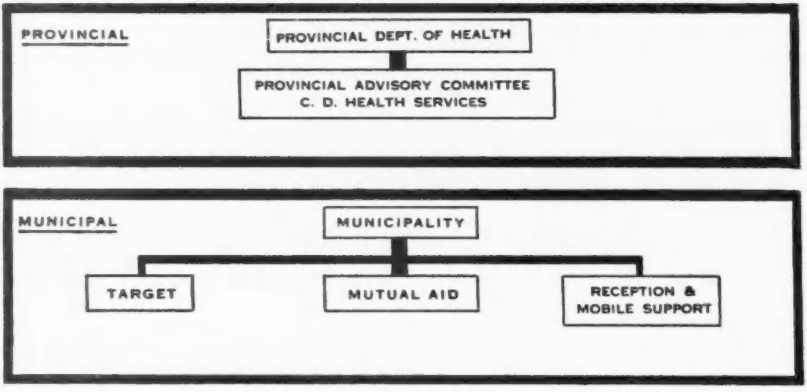

FIGURE 2
Provincial organization for civil defence.

Scope of the Health Services Program, with Features of Primary Interest to Health Department Personnel

The scope of the health services program covers a wide field. Figure 3 indicates the functional arrangements for local area planning. It will be noted that there is a directing organization with an advisory council. Either the director or his deputy should be a senior health official. This is important because health department personnel have an intimate knowledge of the community and have facilities and staff available to assist with the development of the program. In addition, the department should be represented on the advisory council, which is composed of representatives from professional organizations, voluntary agencies, and governmental groups within the community concerned with health. The council acts as a health advisory body for the local civil defence director on policy matters and for the civil defence health services director on policy and operational problems.

Further reference to Figure 3 will show that there are four functional branches: medical services, public health services, special weapons defence, and health supplies. The second of these, the public health services branch, is another feature of primary interest to health department personnel. It would not be possible in a paper of this length to describe each of the functional elements of the branch in detail. A brief reference to certain sections will indicate the type of program envisaged and the reason why it is of major interest to you.

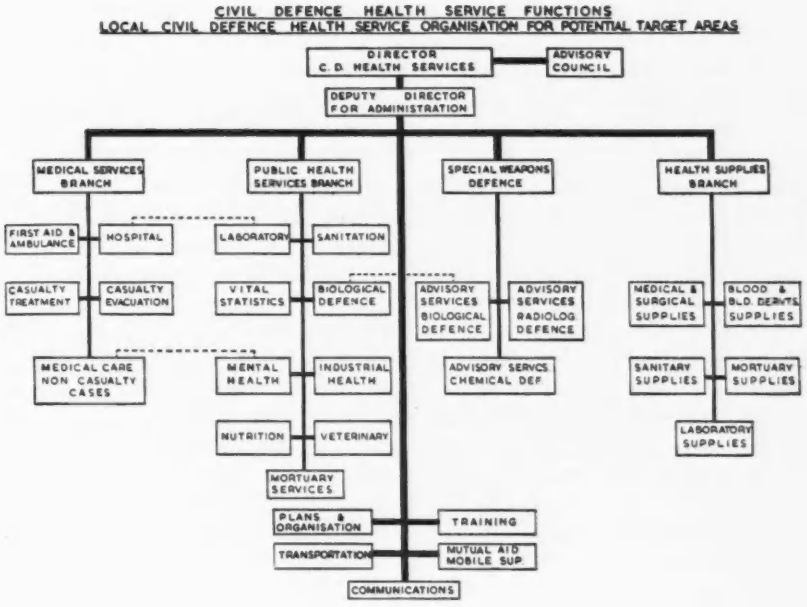

FIGURE 3

(a) *Laboratory Services*

Civil defence laboratory services have three main tasks:

1. To ensure services essential to the care of casualties while maintaining at least a minimum service to the non-casualty ill.

2. To provide the services necessary for the preservation or restoration of sanitation.

3. To play a major role in biological warfare defence.

Following a mass disaster, clinical laboratory procedures would have to be limited to a minimum. For the first twenty-four hours it might be necessary for the casualty services to function with very little laboratory assistance. At the earliest possible moment, laboratories should be prepared to undertake the following emergency procedures: hemoconcentration determination (by a simple method), major blood grouping and cross matching. White blood counts and urinalysis should be provided as soon as possible thereafter. A portable clinical laboratory kit to carry out these procedures has been designed and units are being stock-piled.

Public health laboratory services would direct activities towards the preservation and restoration of environmental sanitation. These laboratories are not presently stocked with sufficient supplies for a major disaster, and reserves of essential equipment are necessary. The possibility of complete loss of laboratory facilities and personnel should be considered and plans instituted for the use of alternative sites and mobilization of additional personnel.

An efficient laboratory service is essential to adequate biological warfare defence, and laboratories at all levels must be carefully integrated into this program. Laboratories which are well equipped and staffed can handle most of the problems in this field.

(b) *Sanitation Services*

Sanitation services would be concerned with the following:

1. To ensure that water, milk, and food are safe.
2. To make arrangements for effective disposal of liquid and solid wastes.
3. To supervise the sanitary arrangements for all emergency services.
4. To provide for adequate control of insects and rodents.

Thorough organization of the forces responsible for sanitation is essential to cope with the problems of providing the prompt restoration of these vital services. Following a major disaster, it is extremely important to restore water supplies and maintain them in a safe operating condition. The quality of the supply is a health responsibility, and during emergencies a quantity of at least one gallon of water per person per day is a minimum requirement. Multiple breaks in water mains, with loss of pressure and back siphonage, might lead to contamination of undamaged parts of a water distribution system. Plans for emergency disinfection should be prepared and secondary sources of supply investigated and tested for safety.

Although not so urgent as the water supply problem, it is essential that sewage disposal be restored as quickly as possible. Interruption of the water and sewage service would make water-carried waste disposals impossible and necessitate a temporary service.

Garbage and trash collections could be suspended for a week or more, but in such cases householders and merchants should be instructed in emergency methods of disposal. The suspension of the garbage and trash collection and the attendant debris and litter in the affected areas would produce ideal breeding places and harbourage for insects and rodents. Insect and rodent control measures could be postponed until the more urgent health hazards have received attention, but an energetic program would be required later.

(c) *Biological Warfare Defence Services*

Extreme statements have been made about the potential of biological agents as weapons which might be used by an enemy against humans, animals, or crops. On the one hand, it is quoted that these agents are capable of disabling or destroying entire populations of large cities and, on the other, one is informed that the agents are ineffective and can be disregarded. A middle-of-the-road assessment of these two extremes probably conforms more closely to the truth.

A biological attack by an enemy could be overt or result from sabotage. The pattern for defence against an overt attack calls for co-ordinated effort by the Armed Services, trained scientific teams, and civil defence authorities. Prevention and minimizing the effects of sabotage require the constant vigilance of civil agencies, with their integration into a comprehensive civil defence biological warfare service.

Biological warfare defence for agents used against humans must be founded on the public health program for the control of infectious disease. It should lead to the strengthening and filling in of gaps in our present setup and result in a co-ordinated attack on the spread of disease, whether the source is natural or inspired by enemy action.

Other services in the public health branch include industrial health, mental health, nutrition, and mortuary services. A complete description of many of these, as illustrated in Figure 3, has been published in the Civil Defence Health Services Manual and the remaining sections will be added in the immediate future.

Progress in Civil Defence Health Planning

(a) *Development of a General Pattern*

The Civil Defence Health Planning Group at the Federal level was charged with the responsibility for developing a general pattern to serve as a guide to provincial and local planners. A working party technique was adopted and about 14 working parties dealt with the various aspects of the health service program. Over 100 Canadian experts have participated in this project, and the material has been prepared and distributed.

When the basic pattern became available, provincial and local planners began to assess their resources and work out details of health service organization. The rate of progress has varied. In some provinces and communities a great deal has been accomplished, and in others very little has been done.

(b) *Training*

Over 50 civilian physicians have attended courses at Camp Borden and Washington on the medical aspects of modern warfare, and arrangements are being made for others to participate in similar courses in the fall. A film strip is being prepared which will be suitable for local and district medical societies and will serve as a further training aid. A travelling team technique was used to indoctrinate over 600 nurse instructors in nursing aspects. These instructors proceeded to train other nurses, and to date over 15,000 nurses in Canada have received this instruction. A small number of engineers received training in radiological health.

The major responsibility for first aid training has been accepted by the St. John Ambulance Association. For civil defence purposes, basic and advanced courses have been prepared and Federal financial assistance provided to assist with the training of over 130,000 persons in first aid.

(c) *Publications*

The Civil Defence Health Services prepared the material for the following publications:

1. Civil Defence Health Services Manual. (This Manual is the basic document and contains the details of the general pattern for civil defence health services. New sections are being added and the material is being kept up to date.)
2. The Nursing Aspects of ABC Warfare—an instructor's manual.
3. Basic First Aid.
4. First Aid and Home Nursing Supplement.

5. Hospital Services and Casualty Records.
6. Hospital Disaster Plan for Civil Defence—a hospital survey planning kit.

(d) *Supplies*

Following a major disaster, essential health supplies would be required in large quantities and plans have been worked out for the procurement, distribution, and stockpiling of essential medical supplies for emergency use in Canada. Detailed, itemized lists have been prepared for the following purposes:

1. First aid training equipment.
2. Supplies for primary first aid at the rescue site.
3. Equipment required for first aid stations.
4. Essential emergency stores to supply hospitals and to replenish first aid stations.
5. Laboratory equipment.
6. Mortuary supplies.
7. Other items such as blood products and plasma substitutes and drugs and supplies to be used for defence against chemical and biological warfare.

This material will be stockpiled on a regional basis in locations which are readily accessible to any disaster area. In order to avoid loss, a program for the rotation of perishable stocks has been worked out. The first aid equipment will be required immediately following a disaster, and this equipment will be distributed locally when the state of emergency justifies such a procedure. Training equipment will be distributed to units as soon as they have been established.

Action Program

When the major part of the paper planning had been completed, the Working Party on Casualty Services was recalled in November, 1951, and asked to recommend a first-phase action program for civil defence casualty services. The need for uniform action across the country was emphasized in order to avoid gaps in the support program. This is particularly essential in Canada as shortages in professional personnel and essential facilities, such as hospitals, will make it necessary to arrange for assistance from communities which may be many miles from the disaster area.

Following the meeting of the Working Party, each of the provinces was visited and discussions led to the adoption of a definite, first-phase action program. It was agreed that 226 of the large mobile first aid station units would be established and that training equipment for these units would be purchased. Local and provincial planners accepted the responsibility for carrying out a detailed appraisal of resources of personnel, facilities, and equipment and to make a study of hospital resources. At the same time, it was stressed that similar developments should take place in other parts of the health service program.

Regional Conferences

Three regional conferences were held in May of this year—one for the Western provinces, another for Ontario-Quebec, and a third for the Atlantic provinces. The meetings lasted for three days and thirty to forty delegates attended each conference. An opportunity was provided for a frank discussion of

problems of mutual interest to health planners at all levels. The success of this regional technique was indicated by requests for further meetings when the next stage in planning is reached.

Information on the Emergency Treatment of Mass Casualties

Repeated and frequent requests have been received for information on the emergency treatment of mass casualties. Arrangements have now been completed for the material to be prepared by medical advisory panels of the Defence Research Board, Armed Service personnel, and the Civil Defence Health Planning Group. It will be reproduced later in the year as a special supplement of the Canadian Medical Association Journal and will be distributed to all physicians in Canada. Arrangements are also being made for other professional groups to have access to this information.

A Challenge for the Future

Civil defence will be a hollow program unless units are organized, personnel trained, and equipment purchased to ensure an efficient response to meet any emergency. We are at this operational stage *now,* and when the program is developed it will be important to maintain interest. This can be fostered by team exercises, sandtable studies, live demonstrations with fake casualties, and many other techniques which will provide variety and interest. In addition, it will be necessary to establish civil defence as a community service and a major role in the planning, development, and maintenance of health services should be accepted as a continuing responsibility of health departments. Your support, with the active co-operation of professional associations and voluntary agencies, can do much to ensure success in a program which is vital to us all.

Family Health Counselling — Let's Be Realistic

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Minnesota Department of Health
Minneapolis

THE public health nurse functions as a health counsellor in homes, schools, industries, clinics, camps, and in other community groups. How she works and the support she needs is our concern at this point.

The "team concept" is strongly urged in the public health nursing field as it is in other professional and specialty services. It is one means of bringing the services of the public health nurse into focus and in tune with other resources of importance to the patient. Thus, we find the public health nurse a member of the nursing team as a means of correlating nursing care and teaching within the hospital, the home, and community situations.

The public health nurse takes her place on the community team that represents health, educational, and social resources. She has opportunities to interpret the health aspects of situations to the other members of the team. In turn, she takes cognizance of the social and educational influences that have a bearing on health practices of the individual.

Within the public health agency itself, the public health nurse is successful in so far as she exercises the "team spirit". She is conscious of the broad objectives of her employing agency and the specific part she is expected to take. She is aware of the general roles other agency staff members are playing, and as she develops her skill as a health counsellor, more and more she will find herself drawing upon the special skills of her co-workers to promote good health practices in the family group. The public health nurse working as the only nurse in a county or city finds the "team spirit" between herself and the nursing advisory board members most essential. The different interests represented on the board serve as a pool of information on resources from which she will draw in her work with patients and in program planning.[1]

These examples of team interplay illustrate why the public health nurse is not a lone worker. She must bear her own weight in every respect as a nurse, but she has a unique responsibility to function in relationship to other key persons who also have service responsibilities.

Leadership is another quality looked for in the public health nurse. Leadership that stems from a willingness on her part to try new approaches, to go out of the way to find out about resources that might be helpful to families, to take time to demonstrate nursing skills, and to find ways of making scientific facts understandable to the average home-maker, teacher, plant manager, and nursing board member.

Presented at the fortieth annual meeting of the Canadian Public Health Association, held in the Fort Garry Hotel, Winnipeg, Manitoba, June 12–14, 1952.

As a dynamic health counsellor, the public health nurse assumes each patient is capable of making *some degree* of improvement in his physical and emotional health, and that she has a responsibility to help him to find and to reach the optimum goal of which he is capable. The public health nurse has the advantage of being able to see the patient in his family and community surroundings, and thus to discern to what extent or the way in which his condition threatens to be a serious handicap. She can direct attention to ways of preventing an extension of physical handicaps; she can encourage patients to regain the use of muscles through persistence in taking exercises and other treatments prescribed over a long period of time. Directing attention to progress made and projecting ideas of how to utilize that improvement into activity that spells for more self-help to the patient and to his family requires an appreciation of what those activities, small as they may be, can mean to a handicapped person. What does it mean to be able to feed oneself, comb one's own hair, take a bath, dress oneself, walk to the dining room, help with simple chores in the home, earn at least part of one's living?[2]

One of the greatest tests of *leadership* for the public health nurse is her ability to stimulate interest among members of families, school faculty, plant managers, and even members of the nursing committee to accept new ideas in solving old problems.

We can see from these characteristics, then, why public health nursing as a profession has an appeal of its own. It appeals to our sense of giving a service to our fellow-beings. It satisfies our desires for adventure in creative thinking. It challenges us to find solutions. It offers many opportunities for us to broaden our understanding of human values.

The value of the public health nurse is accepted all over the world, as demonstrated by the fact that she is a member of the health teams assigned to work in various continents under the World Health Organization. This means that certain measurements have been accepted for the selection of persons and the professional preparation for those who wish to enter the field of public health nursing.[3]

Time does not permit all areas of measurement of a public health nurse. The points I wish to discuss today are the personal attributes, the educational background, and the framework of the organization which makes it possible for her to function. I also wish to bring out the matter of distribution of nurse power, which contributes materially in the type of public health nursing program we are able to offer. Finally, I wish to mention the responsibility we have as public health nurses to help prepare the student nurse to begin her work early as a health counsellor.

Criteria We Use for the Public Health Nurse

Personal attributes

What has been said about team spirit and leadership gives us a clue to the characteristics we look for in a public health nurse whose function is to be a family health counsellor. First of all, *she will like people,* and by that she will understand that people may be governed in their actions many more times by

obscure compunctions within them than by *her* best efforts to teach a new idea. She will see that happen and still maintain a sympathetic and friendly attitude.

Professional honesty is another attitude that must be deep-seated. There are times when we would like to think the other fellow "lacks interest", is "uncooperative" and "antagonistic", but if we have the courage to let our sense of professional honesty speak to us, we will find that we ourselves did not "measure up" in our approach, in our resourcefulness, or in our willingness to listen, etc.

Physical good health is almost trite to mention as a personal attribute for a public health nurse, or any other nurse. What I am thinking of here is optimum health, as well as the health necessary to carry us through a long day, week in and week out, in all variances of weather. How can we "sell" the idea of optimum good health if we cannot grasp it for ourselves? That is, live well and healthfully up to the optimum capacity for our age group. The person who appreciates a good sense of well-being is able to work cheerfully on a team, and to go the "second mile" when need be.

There are many other personal attributes we may consider, but they seem to be subsidiary to these three mentioned and would occur as natural outcomes.

Professional education background

Eventually we may be able to say that every graduate from a professional school of nursing is equipped with the background of information necessary for her to function as a family health counsellor on a public health nursing staff.[4] Today this is not true, and so we encourage graduate registered nurses to enroll in an accredited school of public health to take the courses they will need to fill in the background of facts, and to gain the perspective necessary for them to teach health to others. At this time, we consider one year of study with supervised field experience of at least three months as minimum preparation for a nurse who will work alone in a rural community. A bachelor of science degree is becoming the accepted standard in more and more of our rural nursing services, including school nursing services.

In our present public health fields, we find older nurses who have had years of successful experience in public health and who have accumulated a wealth of information on the job. Many of these nurses have taken advantage of accredited programs of study and brief workshops at different times to keep in touch with current trends.

Public Health Organization as a Framework for Public Health Nursing Administration

Public health nursing is a part of public health services within the community. Sometimes we wonder if that is really the case when we find a county public health nurse seemingly shouldering the whole responsibility. But if we examine the situation a little more closely, we find there is a responsible board or committee that sponsors the program. In rural communities in Minnesota the county nursing boards are recognized by law and are responsible for administering the local public health nursing program. This board includes medical and dental representation. This board is responsible for developing policies which will guide the program. These policies include medical and dental standing orders.[5]

In some communities a beginning has been made to establish a more ideal situation in which the public health nurse may work. A medical director, a supervising nurse, a public health engineer, and adequate clerical help is the first move usually made to expand the public health services beyond increasing the size of the nursing staff. In our state we are supplying such services on a district basis.

The services of special nursing consultants in Minnesota are supplied by the State Department of Health. These special consultants, by working through local district nurse-supervisors (advisory nurses), are able to stimulate and strengthen local health programs. Caution must be used, however, to guard against over-specialization to the point that the unity of the local programs is forgotten, and that over-zealous consultants cause frustration on the part of the local staff nurse, who is the person to carry out all health projects within the family units.[6]

Distribution of Nurse Power

Public health nursing staffs in rural communities work with identical situations that are found in families and community groups in urban areas. The number of nurses on the staffs fall far below the accepted standards for public health agencies. In how many rural communities do we find the ratio of one public health nurse per 5,000 population for a generalized program, or a ratio of 1 nurse to 2,000 or 3,000 when bedside care is offered?[1] In these years of crises, we are greatly tempted to think of one nurse in a county so that more counties will be covered, rather than to build up more adequate services in fewer counties. Were we able to disregard the human qualities of the individual nurses, we could look at our state maps with pride when we see every county pinpointed with a public health nursing service. We know, however, that young public health nurses seldom are willing to go to a county with a population of 15,000 to 30,000 or more and try to do case work. They wonder how they can give nursing care essential to help patients and their families, and to work closely enough with teachers and volunteers to give them a clear understanding of situations. We find our young public health nurses justifiably insecure in trying to adjust from the philosophy of intensive "follow through" to a reverse situation where they spread their efforts very thinly even on severe problems. Too often they find themselves working in contrast to the philosophy of "early case-finding" as a means of preventing serious problems.

Since a large part of our difficulties stems from a chronic shortage of nurses in all fields, we know the problem will have to be worked on from several points of view. This could be a topic for study in itself. Immediate alleviation of tensions in the rural public health nursing service challenges us for a solution.

Supporting and Strengthening the Public Health Nurse in Her Work as a Family Health Counsellor

How are we going to make it possible for the public health nurse to do her best work as a family health counsellor?

Public health agency policies go far in maintaining good morale among the nursing staff. This means continuity of service to families, because nurses, like other people, will stay with an agency longer when they feel the agency understands that nurses have problems too, and is willing to support their efforts to

solve them. Good personnel policies are bound to attract the attention of curious young people who are studying career possibilities.[5]

What do our community leaders know about our public health nursing services?[7]

The nursing advisory boards in our counties and cities cite the program now and then in meetings with other community groups. Our reports are printed in the local papers. But do people really know what the public health nurse does when she visits a family, a school, or a small industry? Organizations request the nurse to talk on health, which she does very effectively. We wonder, though, if people wouldn't learn more about public health nursing if we would bring them along with our program planning—our policies and standing orders—our plans for health education—our needs for recruiting nurses to fill vacancies. After all, it is their public health nursing service and as such merits their constructive thinking.

In some counties we find women and men serving on auxiliary committees and community health councils to help plan certain phases of the community health program. They read about current public health practices and ask for special speakers on topics they feel have a particular bearing upon the health needs of themselves and their neighbors. Interest may be centered for a while on immunization for children, mental health, safety, nutrition, the care of the crippled and handicapped persons, special mass x-ray surveys, fluoridation of water supplies, food handlers' schools, etc. The public health nurse has been able only to tap the reservoir of possibilities to be found in local interest groups. Lest some of us think these local interest groups will decrease demands made upon the public health nursing service, I want to hasten to dispel that thought. In reality, there are more demands made for service, but the requests are made with understanding and with an enthusiasm that makes the public health nurse feel she is working among friends.[8]

In-Service Education

Provision for in-service education is an important phase of our administrative planning. It is one of the strongest supports we can give our nurses and it offers many rich opportunities for them to express their individual needs. They gain confidence as they work out a study program that will improve their skills on the staff.[1] No two rural public health nursing services are alike in that each nurse in a community brings to her job her own interests, her own strengths and her own weaknesses. For that reason, the plans for in-service education must be elastic. The range of content as well as the approach to subject matter must serve the nurse without advanced background in public health, as well as the nurse who wishes to bring herself up to date in specified areas, e.g., maternal and child health, mental health, tuberculosis, chronic disease, and rehabilitation.

The Public Health Nurse's Part in Nursing Education

Nursing educators have come to recognize that every professional nurse, also the practical nurse, is successful in so far as she or he is able to motivate the patient to be responsible for seeing that medical instructions are followed through,

not only in the hospital but in the patient's home and work surroundings. In other words, the modern nurse must be able to adapt her instructions to meet the individual needs and understanding of each patient. Nursing educators have realized for many years potentialities of the public health nursing service as a resource for teaching students the essentials of home nursing. How to give nursing students equal opportunities for gaining an understanding of the patient as a member of a family group has come to be of major concern, not only for schools of nursing, but also for public health nurses who are requested to participate in the teaching program.[9]

Thoughtful planning is essential if we are going to give the student nurse a true perspective of how the public health nurse serves as a health counsellor. Pre-requisite to taking on the additional load of teaching, we feel the nurse should have demonstrated her own ability to work with families and community groups. Also, the administrative nursing board must be willing to divert some of the nurse's attention from a strictly patient service program to the student field teaching activities. Also, a point of agreement is necessary between the nursing school faculty and the public health nursing staff. In our state we are working constantly to clear on responsibilities, on standards for teaching fields, and on policies for the protection of nursing service loads. Because every student may not have field experience with a public health nurse, we are stressing the value of faculty observations and orienting them to local and state health resources. We think this is a way to help them develop opportunities for students to broaden their understanding of patients' health needs, both in the hospital situation and in their homes.[10]

Summary

The public health nurse with her many ramifications of activities in the community stands out as a health counsellor for patients and their families. Personal attributes that contribute to the success of the nurse center round her basic interest and understanding of people. Professionally, the nurse needs a sound background of nursing knowledge and skills into which she will weave a continuous pattern of public health principles and social concepts. The health agencies employing the public health nurse have responsibilities for interpreting the services, and for securing medical and dental guidance which is very necessary for the nurse to function successfully as a health counsellor. As a community health agency, the public health nursing service must give recognition to the place of the nurse as a member of the health team interested in patient and family teaching. She does not do it all. Where does she come into the picture? How does she pick up the threads and carry on with the pattern? Since public health nursing services can function only in so far as nursing staff is available, public health nurses are obliged to assist with recruitment of young people into their profession. We also must keep in mind ourselves to encourage close co-operation between nursing service in hospitals, faculty of nursing schools, and public health nursing agency staffs as a very effective means of developing a common understanding of teaching patients how to use resources available to improve their health.

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The Health Officer and Hospital Regionalization

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FOR a number of years there has been a growing and ever more widely expressed opinion that public health agencies and hospitals should work more closely in meeting their common problems. In reviewing the literature of the past thirty years one is struck with the emergence of this idea of integration in the 1930's. It was generally held at the beginning of that decade that the scope of public health was confined to those fields which concerned the public en masse. As Dr. Morris Fishbein stated fifteen years later, while he had subscribed to that proposal in 1930, such a definition was so simple as to be simple-minded.[1]

Even prior to 1930 there were broad and comprehensive statements about the respective roles of the official health agency and the hospital, but the general realization of the need for joint action in the many mutual points of concern did not seem to develop until later.

A considerable amount of the growing interest in the role of hospitals and public health agencies has stemmed from the rapid growth of both groups over the past ten or fifteen years. In many respects the developments of these two agencies have been parallel, and it has only been within a comparatively few years that we have seen any integration of aims and objectives to reach a mutually desired end. But, it might be added, in only a few respects has this fusion of interest culminated in joint action. We have accepted the principle of the combined public health and hospital laboratory, but one might question whether our acceptance has not been largely a theoretical one and in practice has fallen far short of developing specific techniques which were capable of being put into operation generally.

The development of diagnostic clinics has proceeded with varying success in different areas of this country. In some clinical fields, such as in tuberculosis and cancer, the integration between public health agencies and hospitals has been reasonably complete and working relationships are sound and progressive. In many other fields, however, little has been accomplished.

Two significant facts must be considered in surveying the role of the public health agency and the hospital. The first of these is that, up to now, most major developments in public health have been based on prevention as distinguished from treatment. Yet we know that the control of such diseases as tuberculosis,

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cancer and syphilis is dependent upon treatment. Treatment thus becomes prevention, or vice versa, if you prefer.

The control of disease in the future would seem to be largely bound up with an increased utilization of treatment services, rather than with any great new development in the preventive fields such as those of immunization, environmental sanitation, or health education. The success or failure of such techniques as multiphasic screening will depend upon an adequate treatment program for control and, in fact, development will probably be limited by the volume of treatment services available. Programs of cancer control have shown themselves to be dependent for their success upon the adequacy of surgical or radiation therapy. And even in such fields as mental health one can, admittedly with temerity, suggest that the major efforts of the next few years will remain in the treatment field.

The second major fact is that we cannot neglect to consider the economic implications of the provision of health facilities, whether they be preventive or treatment. Public interest in the provision of health services of all kinds has led to a very sharp increase in the amount expended for health services. In the Province of Saskatchewan, for example, public health costs in the past ten years have increased tenfold while the increase in hospital charges has been fivefold. The increase in the cost of physicians' services during that period of time is difficult to gauge, but there would seem to be little question that a major increase in the gross cost of these services has also occurred.

Some responsibility must rest with health departments to take cognizance of such increases and to exert every effort to guard the public purse against waste, duplication and inefficient operation. Dr. Charles F. Wilinsky for his presidential address before the American Public Health Association in 1949 chose as his topic "The Public Health of Tomorrow." He had this to say about the relationship of the health officer to hospitals generally:

"His [the health officer of the future] responsibilities as I see them, include a concern for the existence in his community of good out-patient and hospital facilities. . . . He must be interested in the avoidance of duplication of health services, which always spells waste, and must be concerned with the filling of existing gaps so that there may be a more complete program to benefit the health of the people."[2]

There is no need to belabour the point that, in theory at least, there has been a general acceptance of the principle that organized public health and the hospital must work in closer cooperation. Public health officers and hospital administrators are generally not able theoreticians—in fact, both groups tend to be very practical in their approach to any problem. The public health man has his background of biometry and his knowledge of statistical methods, and the hospital administrator finds his mind constantly being conditioned by his study of a balance sheet. Much of our thinking has been only in the very broadest terms, and there seems to have been a tendency for both the health officer and the hospital administrator to shy away from what is regarded by them as merely a theoretical concept. The result has been that both public health departments and hospitals are very slowly assimilating the idea of integration.[3]

It therefore seems that much can be gained from consideration of a specific

area of mutual interest to the hospital and the health officer. This is particularly true if such an exploration may lead to a program of joint action. I would suggest that the problem of hospital regionalization is a field of interest which might well be so studied.

Hospitals, exhibiting the same traits of gregariousness as most other organizations, have banded themselves together in various ways. Again, as with most other organizations, types of groupings have been determined by the mutual interests and the improved results which might be expected from joint action. The formal association of hospitals on a provincial basis is well known to all of us in this country. Less well known is the development of the regional council idea which is seen in several areas in the United States and elsewhere.

The idea of regionalization of hospitals has sprung from a desire on the part of each hospital to improve its service by fostering a closer cooperation with its neighboring hospitals than could be accomplished through a larger provincial or state association. The major objectives of a hospital council have been expressed as (1) more effective administration of individual hospitals; (2) an opportunity to carry out cooperative planning and (3) better community service as a result.[4]

A number of specific roles have been played by various hospital councils that have been developed in the United States. Such practices as the establishment of uniform employment procedures throughout hospitals cooperating in the regional council's activities have been established. Not only does this lead to improved status for the individual employee, but it removes, to a great extent, the element of competition existing between neighboring hospitals. Programs of public education have been fostered to carry to the public the hospital's role in the community, and to inform the public generally of the problems facing hospitals today. Various group-purchasing procedures have been extremely successful in lowering the cost of supplies and equipment. This formulation of group-purchasing policies has led a number of hospital councils towards standardization of equipment and supplies. One of the principal arguments for standard equipment is that a free interchange of supplies then becomes possible between member hospitals. The advantages of this arrangement will be clearly evident, and it might be pointed out here that, for purposes of civil-defence planning, it becomes doubly important to make provision for a free interchange of equipment on a logical and sound basis.

Joint purchase of expensive but rarely used equipment has been carried out. The logic of this arrangement becomes more important when it is borne in mind that hospital equipment is becoming increasingly specialized and likewise increasingly expensive.

The joint use of highly specialized staff is also an important development of the regional hospital council idea. Particularly where member hospitals in the region are small, the possibility of obtaining highly qualified staff becomes increasingly difficult. It has been shown that the sharing of a pathologist and a radiologist by several hospitals has worked out with entire satisfaction. The experiences of the Kellogg Foundation in Michigan in this regard demonstrate that it is possible to assure first-rate pathological and radiological services in all hospitals regardless of their size.[5] The sharing of personnel can go on to

include many other skilled persons: the sharing of a pharmacist, a dietitian, a medical records librarian, and in some instances occupational and physical therapists, are all examples of this trend.

These are some of the applications of the practical way in which a regional hospital council can work for the betterment of hospital service. In a broader way the various hospital councils which have been developed up to the present have spoken on behalf of member hospitals to agencies of government, to the medical profession, and to the public. Many of them have succeeded in presenting a united front in their approach to these various groups and agencies, with the resultant increased impact of their collective voice.

One of the significant developments which has taken place in regional councils is the development of a greatly increased interest on the part of the member hospitals in assessing the standards of service. Perhaps the best example of this is in the Rochester Regional Hospital Council, comprising the hospitals in and around Rochester, New York, in which a considerable amount of interest has been focussed on the quality of medical care given to hospital patients and where an extensive medical audit has been developed.[6, 7, 8]

The development of hospitals on a regional basis has also proceeded in a broad way in Great Britain since the inauguration of the National Health Service. As a result of the planning and administrative experience gained in the development of the Emergency Medical Service from 1938 onward to the end of the war, certain important conclusions were reached. These were: (1) the need for a coordinated pattern of hospital services; (2) the provision of specialized treatment units or centres and (3) a development of a program of consultation between hospitals to stimulate research and foster the use of new methods.[9]

With the decision to inaugurate a National Health Service, it became necessary to plan for a greatly extended hospital service with some of the elements of coordination which had been seen to be desirable during the war years. For administrative purposes England and Wales have been divided into 14 regions, with a medical school included in each region. The Regional Hospital Board assumes general management of all the hospitals within the regional boundaries and in a general way assigns management of an individual hospital to a Local Management Committee.

The idea of integration of all health services into a coordinated plan has seemed to be one of the hoped-for ends in the National Health Service. It is notable, however, that medical officers of health were rarely represented on the Regional Hospital Boards although they were represented on the local Hospital Management Committees. In his study of the National Health Service, Peterson points out that this is a source of some concern to medical health officers, who have suffered a considerable loss of status.[10] This has in turn reflected on the number of new men becoming interested in public health in Great Britain. Enrolment in the schools of public health has dropped off to an alarming degree and much concern has been expressed for the future of public health in the British Isles as a result.

In an apparent effort to improve cooperation between the three main branches of the National Health Services—namely, the hospital, the general practitioner, and local health services—recommendations have just recently been made to the

Minister of Health that local Joint Health Consultative Committees be set up. This was a major recommendation of the Central Health Service Council, which has been studying the whole problem of coordination between various agencies for several months past.[11]

As I have noted, the development of hospital regions in Canada has not progressed to an extent that has occurred in the United States or Britain. There are undoubtedly a number of reasons for this, but I do not feel that one of them is because the principle of regionalization is unsound or unworkable. One of the principal reasons for the lack of acceptance of this idea in Canada can be traced to the nature of our hospitals. Because of our more widely scattered population, and particularly because such a large proportion of our population is rural, hospitals have been more widely separated and of smaller size than are those in the United States. With the exception of a few metropolitan areas in Canada, the most common hospital in this country is in the size range of 100 to 200 beds. In many areas, and particularly in the prairie provinces, the size of hospitals tends to be much less than that.

One of the principal problems inherent in the development of a regional hospital system is bound up with the need for coordination of the various agencies and groups who are concerned with providing hospital care. Coordination may be spontaneous but more frequently it follows enlightened leadership. With the many diverse groups that are interested in the provision of hospital care, it seems evident that leadership is an essential prerequisite for progress.

The hospital board is almost invariably composed of laymen who are at the moment struggling with difficult financial problems and who may be somewhat hesitant to explore any new avenues which conceivably could cost the hospital money. The hospital administrator may be one of those who is keen, active, and ambitious to promote the welfare of his hospital, and is anxious to explore new avenues of progress. On the other hand, he may be interested only in maintaining the status quo and may look with some disdain upon any cooperation and sharing of services. It can be taken for granted that the medical practitioner is a key link in the success of a logical regional development. It cannot be taken for granted also that he has already been acquainted with the merits of such a scheme.

With particular reference to the Canadian situation, in what manner might such a program be brought about? What would be some of the tangible advantages?

Regional hospital programs as they have developed elsewhere have been founded largely on economic grounds. Hospitals have seen that they could operate more efficiently and more economically if many of their problems were met as a group. Certainly in these days of rising costs that is no mean motive. If economies can be developed in Canada by such programs, and I am certain they can, then the official health agency has a legitimate interest in them.

The tasks which a system of regionalized hospitals can fulfil become more pressing for the official health agency when province-wide programs of prepaid hospital insurance are established. Health departments in two provinces have had the administrative experience of grappling with the urgent problems of steering hospitals into more economical and more efficient channels as indices of costs and utilization continue to rise. Provincial hospital insurance programs

may create new difficulties which did not exist before, but they also provide new opportunities for a bold solution of these problems. The grouping of hospitals on a regional pattern coordinated to develop more effective financial, administrative and medical practices is the most logical approach under these new circumstances.

The possibilities for improvement in the standards of medical and hospital care which arise in a well-integrated regional program are also interesting. As I have briefly mentioned, the Kellogg Foundation has shown in their program in Michigan that good pathological and radiological services can be provided in small hospitals as well as in the larger ones by the sharing of services. Modern medicine is in the dilemma of witnessing new developments of medical science which occur so rapidly that only the most brilliant physicians can hope to keep reasonably up-to-date. It appears that one of the answers which the general practitioner as well as the specialist is seeking is how to keep abreast of these developments in his own community. One solution is to provide him with ready access to specialized services such as can be provided through a functional integration of hospital services. Through such an integration, efficiency in the use of highly specialized personnel is possible.

It is becoming evident that there should be more concern shown in the essentiality of efficient use of our resources of health personnel. As one reads the health survey reports of the various provinces it is striking to note the deficiencies which they catalogue—here, another 75 laboratory technicians, there, another 50 medical social workers, plus hundreds of nurses and so on. With greater emphasis being placed on more intensive training and of evermore-demanding prerequisites for that training, one wonders whether the sources of trained personnel are capable of meeting the demands. In my own province, for example, we are now enlisting 25 per cent of the girls with Grade 12 education for the nursing profession, and another 25 per cent for the educational field. One is almost forced to the conclusion that we cannot go on indefinitely recruiting an unlimited number of female health workers from the remaining pool. The problem in the male employee field is equally difficult. One solution seems to be that the most efficient use of our personnel resources is a first and logical step. The development of a regional hospital program is one technique which can assist in achieving some of that efficiency which is desirable.

Here, then, is a specific area in which the health officer can provide the leadership essential to the forging of a new chain in the provision of a better health service—a chain made up of hospitals, medical practitioners and official health agencies.

One is naturally inclined to ask whether the health officer is the logical person to provide this leadership. I submit that an examination of the problem will reveal that he is the only logical person for this role. In giving this leadership he will solidify his relations with hospitals, with the medical profession, and with the general public.

Bearing in mind the general hospital pattern in this country, with a relative scarcity of large metropolitan hospitals and a great number of medium-sized and small institutions, it is even more evident that the health officer is in a logical position to act as the catalyst in the organization of a sound regional hospital

program. He is the one person whose interests spread over a wider geographic area which often embraces more than one hospital. He also has a current contact with the medical practitioners in the larger area who may be on the staff of only one of the hospitals. Finally, he is in the position of being able to reconcile diverse interests, since he has no pecuniary interest which might be held as a barrier against others who could afford the necessary leadership.

I am certain that most, if not all of us, have argued in public or in private that the official health agency and medical care agencies must strive for greater co-operation in our joint task. Certainly two distinguished deputy ministers so stated. Dr. Fred Jackson stated in 1946 that, "whether the health officer likes it or not, as an official of the government he is concerned with and must take part in the provision of medical care, at least in selected fields."[12] Dr. Morley Elliott, in a talk I was privileged to hear a year ago, to a group of hospital administrators, gave further testimony to this thesis.[13]

Official public health agencies and public health officers have a long tradition of leadership in progressive steps towards better health services. My suggestion is that the development of a regional hospital program affords a specific challenge to your leadership, which deserves much thought and more exploration. It may be that the job will be done eventually by others, but I hope that the opportunity for the official health agency to do it will not be lost by default.

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Child Care in a Large City

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BECAUSE the children of today are the citizens of tomorrow, people the world over are concerning themselves greatly with the needs of children. Only when we know the needs can we work towards fulfilling them.

In December 1950 a White House Conference, the fifth in a series of conferences called every ten years in Washington, was devoted to children and youth. The major platform was:

"Believing in the primacy of spiritual values, democratic practice and the dignity and worth of every human being, and recognizing that these are essential to individual happiness and responsible citizenship, we have come together to enquire how the necessary mental, emotional and spiritual qualities may be developed in children, and how the physical, economic and social conditions favourable to such development may be assured."

Obviously this all-encompassing objective entailed many months of thinking and planning by many groups of persons in all fields of child care. It is interesting that young people attended and contributed their thoughts to this large gathering of outstanding citizens from various states and countries. The written reports of that conference should point the way to all who work to improve child care.

Doctors, nurses in all fields, dentists, nutritionists, social workers, educators, church leaders, recreation personnel and others are working for the good of the child. All have short-term aims, according to their field of endeavour. But there is one objective to which all contribute, that is, the attainment of physical, emotional and spiritual health for every child.

We are asking ourselves today whether child care in our city is working. If it is not, what can we in public health do to make it work?

Child care is working only if we are using the latest available scientific knowledge to achieve the goals.

As long as preventable deaths, illnesses and defects occur among infants and children, as long as there are those who are handicapped by social or environmental factors, as long as children reach adulthood without ideals to make them happy, responsible citizens, child care in not working.

Limitation of time prevents discussion of the physical, economic and social conditions referred to in the platform for the White House Conference. We would all agree with the statement in a report published following the conference: "It

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is not only the body but the spirit that is affected when, in a democratic society that has abundant services, many of its children lack access to the goods and services they need for the development of their potentialities. Such deprivations can foster resentment and feelings of inferiority that adversely affect both the individual and society."

All who contribute to the child's total personality should examine their services to see where they might improve their part of the program. There also must be cooperation and good referral systems between all agencies in the community if we are to make child care work still better than it is today.

We, in public health, also have a responsibility to examine our program, that of health services, to determine where in the light of the most recent scientific developments, we might improve child care.

In consideration of our first objective, "Maximum Physical Health for Every Child", let us look at one aspect of our program where we might make greater progress.

Last year, for every thousand live births, forty-one infants died in Canada in the first year of life. We know that some of these deaths, perhaps a high percentage, are preventable. One of our proofs is in the fact that fourteen other countries have a lower infant mortality rate than Canada. Sweden led the world with an infant mortality rate of 20.

As a result of continued education of the public, regular medical supervision for children has become the accepted practice in the first year of a child's life in a fairly high percentage of homes in large cities. Infection, the leading cause of death in the one- to eleven-month period, has been substantially reduced. Medical science has supplied the drugs with which many infections may be controlled. Immunization is more widely accepted, and parents seek medical attention earlier. In the city, that help is within easy reach.

With this reduction of deaths from infection in the period one to eleven months, the scales are now weighted heavily toward what has been referred to as "the hazardous first month of life". The leading cause of death in this period is prematurity. A recent study in Chicago shows birth injuries as the second cause of death and malformation of the newborn as third in causes of death in the neonatal period. What can we do to reduce the infant mortality rate in Canada?

Our maternal health program has adequately demonstrated that the life of a child begins with conception, not with birth. The necessity of adequate diet during pregnancy to meet the requirements of mother and child has been stressed for many years. But recent research studies have shown the direct relation of the mother's diet to prematurity, as well as its relation to congenital defects. The deaths of so many infants from these causes point to the possibility that many mothers may not have provided their infants with the necessary nutrients for proper development.

But let us look further. In an outstanding monograph published recently, the National Research Council states: "At the time a pregnant woman seeks medical advice, fetal damage may already have occurred if her previous diet utilization or general health has been poor." New scientific developments should lead us to examine all aspects of our program. Let us consider a few of the implications of this new knowledge for public health nurses.

1. What is an adequate diet for pregnancy? Most recent studies stress the need for 85 grams of protein daily, as well as other important factors.

2. How many of our prenatal patients are actually providing and utilizing an adequate diet? Do nurses spend sufficient time with patients to be sure that they understand and are able to provide an adequate diet? Or do they assume that patients with sizable income and good social standing are necessarily eating the proper foods? A survey in the Rochester-Olmstead County Health Unit showed more private than clinic patients to be in the "fair" to "poor" dietary rating.

3. If we recognize that normal physiological and good psychological adjustment are necessary to ensure that the body makes full use of the diet taken at any time, nurses must be prepared to include mental health into their pre-natal teaching.

4. If fetal damage may already have occurred before a woman seeks medical advice, the need for maximum physical health for young women before the childbearing age is re-emphasized. Then we, as public health nurses, have a responsibility to help parents to attain better nutritional standards for their children during the pre-school and school years in the hope that there will be a resulting reduction of neo-natal deaths. This behooves us to examine our program still further. Are staff nurses in our agencies prepared to give this help?

Realizing that we have not attained maximum physical health for all children and having demonstrated one area in which we, as nurses, may help parents to attain better nutritional standards during the preschool and school years and thus perhaps reduce neonatal deaths, do we believe that staff nurses in our agencies are prepared to give this help?

The Baillie-Creelman report states that many public health nurses feel inadequately prepared to teach normal nutrition. If there is a nutritionist within the agency, why not utilize her services to learn of the latest developments in nutrition and to provide in-service education for nurses?

In order to give all mothers the benefit of this knowledge, we must find better means of reaching more mothers. Considerable study of better case-finding methods is required.

In Winnipeg the official agency is responsible for individual and group teaching of expectant mothers. Four series of classes are conducted in various areas of the city from September to June each year. These classes are periodically advertised in newspapers and the Hydro News Bulletin. Every patient attending the prenatal clinic of one of our large hospitals is referred, by a special form, to the district in which she lives. A nurse makes one visit of instruction and invites her to attend the classes nearest her home. If she does not wish to attend, monthly visits are planned to give individual instruction.

These case-finding methods have reached only a small percentage of the mothers who give birth to babies each year in our city. However, group teaching of expectant mothers is comparatively new in most cities, and perhaps we should not become discouraged. In Winnipeg there has been a gradual increase in the attendance at our classes.

Better referral from private doctors as well as from all clinics would bring more cases to our attention, but we should also examine our service to determine why there is not an increasing demand from the parents for this instruction.

Have we adequately prepared nurse teachers? Have we decided what is adequate preparation for the job? Lacking such prepared staff, do we give sufficient help to the best person available and make allowance in division of duties for the added responsibility and time required in preparation for these classes?

Knowledge of group-teaching methods as well as the ability to teach is as necessary as thorough knowledge of the subject. The nurse teacher should be well informed not only about maternal and child hygiene but all fields of health.

Consideration should be given to parents' classes and rooming-in units in our hospitals. Our growing recognition of the family as an entity points to the need for experimentation in this field. In our neighbouring city, the St. Boniface Hospital is planning rooming-in units in the new wing which is soon to be built. Any hospital with these units may, as another community agency, lend continuity to our program by recognition of the whole family. The newborn infant shares a unit with its mother, and the father is able to visit as frequently as he wishes. As well as affording opportunity for teaching parents how to handle the infant, this provides an excellent opportunity for development of a comfortable relationship between mother and baby.

This brief analysis of one area in our program, that of maternal health, demonstrates the urgent need to re-examine our total services if we are to attempt to attain that first objective mentioned earlier, namely, maximum physical health for all children.

In our present state of knowledge, we are still confronted with our responsibility to the handicapped child and the challenge his rehabilitation offers to the medical-nursing team. If he is to attain maximum physical health for his potentialities, he must not only be assured of proper treatment but also the means to obtain treatment.

In Winnipeg these children may be referred to the Crippled Children's Society for assessment by a medical board consisting of a pediatrician, neurologist, psychiatrist, and orthopedic surgeon. Following this, treatment is planned privately or through the Children's Hospital. Other services for the handicapped child are provided by the School for the Blind and two Hard-of-Hearing Classes.

Explanation of the need for accepting the handicap by parents and child is the responsibility of the nurse in the hospital or the public health nurse. With understanding, guidance and encouragement, the child may gain independence and a sense of achievement by participating in society.

Mentally retarded children may be referred to the Manitoba School for Mentally Defective Persons, at Portage la Prairie. The need for more facilities in these fields is indicated by long waiting lists, and children are remaining in their homes, to the detriment of other children in the family and the development of their own limited potentialities. The presentation of these needs becomes the responsibility of each member of the health team, including the nurse.

Mental and emotional health are as important as physical health; the two states cannot be separated in a healthy personality. Much has been said in recent times about mental health. Lay people are becoming more aware of the number of cases of mental illness, some of which reach mental institutions but many of which arrive in doctors' offices with physical symptoms brought on by mental ill health. Studies show that almost fifty per cent of all people seeking medical attention

are suffering from ailments brought on or made worse by such emotional factors as prolonged worry, anxiety or fear. As parents must be emotionally healthy if they are to develop emotionally healthy children, it is a nursing responsibility to be prepared to give the support and knowledge required by parents so that they can be confident and relaxed in their attitudes toward their children. As a result, more children will reach adulthood ready to take their share of responsibility in guiding the affairs of society.

We have no accurate figures on the number of children having emotional or behaviour problems, but there is ample evidence that the number is increasing. The demand for child-guidance clinics indicates that this is one of our most pressing problems today.

Winnipeg is fortunate to have two child-guidance clinics, one in the outpatient department at the Children's Hospital and the other under the administration of the Winnipeg School Board. The latter, working with school children only, employs a full-time psychiatrist, six psychologists, and nine visiting teachers (formerly called truant officers or attendance officers). It is of interest to note the trend to the use of a social worker as liaison between the home and the school, thus recognizing the all too frequent close relationship of truancy to emotional factors within the home. At present six of the nine visiting teachers are trained social workers. As many speech and reading difficulties encountered in our schools are of emotional origin, a speech and reading clinic is maintained as a division of the clinic. Though under the school board, the clinic works closely with the City Health Department and staff nurses in the schools. Group conferences are called periodically by the clinic staff to report on progress and plan for the future of children referred. The conferences are held in the school with the principal, interested teachers, the visiting teacher, and the public health nurse.

While these special services are available, in order to make child care work there must be increasing recognition among nurses of their place in the mental health program.

Building up the mother-child relationship could be our greatest contribution to the development of emotionally healthy children. By relieving anxiety and building up the mother's security, the nurse could do more for the mental health of the community than in any other way. Public health nurses across Canada do not receive sufficient instruction in the certificate or diploma courses to know the normal growth and development of a child and therefore do not feel able to teach parents. Only about two thirds of the nurses in Canada are qualified public health nurses, and even they feel the need for further preparation. Better integration of mental health in the basic preparation of nurses, as well as in preparation for public health, is necessary. Integration of mental health in all fields—prenatal, post-natal, infant, preschool, school, and adult supervision—would provide a background for general public health work.

Even though greater emphasis were placed on formal preparation of the nurses in this field, the agency would also have a responsibility for continuous in-service education.

The nurse requires better preparation in her understanding of people, and of

her ability to teach, and in methods of interviewing. She should continually examine her own feelings and attitudes toward people and the way she accepts and responds to the problems they present.

If we are to contribute to more relaxed, happier mother-child relationships, we must find better referral methods. A public health nurse should reach every mother in the community when she is in need of the greatest support and encouragement as well as practical assistance with infant care, during the first twenty-four hours following discharge from hospital. Only if the mother seeks the services of the Victorian Order of Nurses does she get this help when it will mean the most to her.

The child health conference also affords ample opportunity to promote better mother-child relationships. When more nurses are prepared to interpret the stages of development from one to six years, it is to be hoped that there will be greater recognition of the preschool child in our health centres. At present in Winnipeg a large percentage of children attending are under one year of age. The age group with the greatest potential—preschool children—frequently do not come to the attention of the nurse unless a visit is made to the home for a new baby. This visit might be made by the Victorian Order of Nurses to demonstrate infant care or as a birth registration visit by the City Health Department nurse. As both agencies offer a family service, limited instruction may be given to the preschool child at this time.

At present the physical environment of our child health centres is not conducive to good conferencing. Our centres, as in most cities, are in church halls or schools, where the mother and nurse lack privacy or freedom from noise and other disturbing factors. No matter how well prepared the nurses are in interviewing methods and ability to teach the normal development of the child, it is doubtful whether maximum help can be given to mothers in these circumstances.

There should be sufficient space in our child health centres for children to play, so that mothers could observe children of various age groups, as part of the nurse's teaching. The demonstration of play equipment serves as an educational project to mothers.

These are examples of a few opportunities the public health nurse has to contribute to the mental health program. In addition to preparation, she must have satisfactory environmental conditions if she is to do a good job.

Therefore if agencies are to acquire and retain fully prepared staff, they must offer working conditions and personnel policies which would include, for example, salaries comparable to those of other professions requiring similar preparation and aptitudes.

Because of the need for diversified and up-to-date knowledge in the various aspects of public health nursing, it would seem essential that agencies provide the expert information given by consultants in the various fields—for example, mental hygiene, nutrition, and health education.

As public health nurses, having entrance to the home, with the opportunity to recognize the many needs of the child in the family, we have the challenge and the responsibility to make child care truly work.

Distribution and Incidence of Echinococcus Granulosus in Man and Other Animals with Special Reference to Canada*

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HYDATID disease in man, caused by *Echinococcus granulosus* (Batsch, 1786) Rud, 1805) has been diagnosed in widely separated areas in Canada. There are few records of the occurrence of this tapeworm in domestic animals in Canada and the United States, but it has been found in wild animals, particularly moose and wolves. This paper reports findings on the incidence and distribution of *E. granulosus* in various animals. Published records of this parasite, as well as a number of personal communications reporting it in man and other animals, are also summarized.

Definitive Hosts

Carcasses of wild animals were collected by various members of the Department of Lands and Forests of Ontario and sent for examination to the Ontario Research Foundation. *Echinoccocus granulosus* was recovered from 36 of 58 wolves, *Canis lupus,* that were submitted. Mr. R. Standfield, University of Western Ontario, advised me that he found the parasite in 6 of 14 wolves that he examined. All the wolves were taken in northern Ontario in an area extending from the Manitoba boundary on the west to Algonquin Park on the east. Adult worms were found also in a coyote, *C. latrans*, and a fisher, *Martes pennanti,* taken near Chapleau, Ontario. Fifty-one fishers from this and other parts of the province were not infected. The parasite was not found in 31 red foxes, *Vulpes fulva*, taken in areas where infected wolves were captured. Negative findings in over 200 foxes are recorded also for various parts of North America (Riley, 1933; Smith, 1943; Erickson, 1944). The widespread distribution of the infected animals is shown in Fig. 1. Infected wolves have been reported elsewhere in North America, by Riley (1933) and Erickson (1944) in Minnesota, and by Cowan (1948a) at Jasper, Alberta. *E. granulosus* has been listed from the coyote by Railliet (1893), Stiles (1906), Stephens (1916), Hall (1919), and Meggitt (1924). Some of these authors report it also in the cougar, *Felis concolor*, but no recent reports of infection in the animal have been noted. Rausch and Schiller (1951) found this parasite in arctic foxes, *Alopex lagopus*, on St. Lawrence Island, Alaska, and also in wolves on the mainland and in dogs in

*This investigation was supported by a grant from the Federal Department of Health and by the Research Council of Ontario.

Alaskan villages. Hadwen (1923) reported infected dogs in Unalakleet, Alaska. Dr. Tennant states in a personal communication that he collected *E. granulosus* from two dogs in the Stuart Lake District of British Columbia where human infections have occurred. Previously, Bruce (1930) had reported an infected dog in that province. The apparent absence of the worm in dogs in southern Canada is probably related to the kinds and distribution of animals that have been found infected with the hydatid cysts.

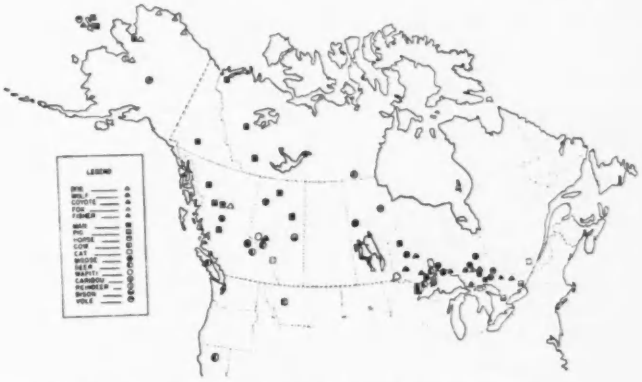

FIG. 1. Distribution of animals infected with *Echinococcus granulosus**

INTERMEDIATE HOSTS

The intermediate stage of the tapeworm, the hydatid cyst, has been found in 17 of 29 moose, *Alces americana*, examined during the present study. Five of eight moose were found infected in 1933 on Isle Royale by Dr. D. Coburn. This record was kindly submitted by Dr. L. D. Fay, Department of Conservation, Michigan. A personal communication from Dr. R. B. Miller, University of Alberta, states that an infected moose in Alberta was examined by Dr. E. Moore. The parasite has been reported previously in moose in Manitoba (Hadwen, 1932), Minnesota (Riley, 1933; Olsen and Fenstermacher, 1942), British Columbia (Cowan, 1948b; Hatter, 1948) and Ontario (Law and Kennedy, 1933; Peterson, 1949; deVos and Allin, 1949). This parasite was not found by Lamson (1941) in a study of 20 diseased moose in Maine, nor in sick moose examined in Nova Scotia by Cameron (1947; 1949). This may be related to the absence of wolves (Fig. 2) in these areas.

The parasite was found in a single white-tailed deer *Odocoileus virginianus*, among 353 that were examined in Ontario by personnel of the Ontario Department of Lands and Forests and the Ontario Research Foundation. The infected animal was taken in Sibley Park, Ontario, by Dr. A. deVos. Infection in this and other species of deer has been noted by Riley (1939) for Minnesota, and by Cowan (1948a, 1948b) for Alberta and British Columbia. Dr. M. N. Rosen,

*Since Figs. 1 and 2 were prepared, Mr. H. U. Green, Dominion Department of Mines and Resources, has kindly reported an infected coyote taken at Banff, Alberta, and Mr. A. Lawrie, University of Toronto, has submitted adults of *E. granulosus* collected from a dog at Neultin Lake, Keewatin District.

University of California, has written to say that five coast deer, *O. hemionus columbianus,* have been found infected among hundreds examined in California. Other surveys of parasites in deer (Van Roekel, 1929; Rush, 1932; Shaw, *et al.,* 1934; Dinaburg, 1939; Whitlock, 1939; Van Volkenberg and Nicholson, 1943; Herman, 1945) have involved hundreds of animals, but hydatid cysts were not found.

Murie (1944) found hydatid cysts in a barren-ground caribou, *Rangifer arcticus,* and Banfield (1951) found them in 2 of 54 caribou examined in northern Canada. Mr. A. Lawrie, University of Toronto, has kindly submitted his record of an infected barren-ground caribou among 29 that he examined in

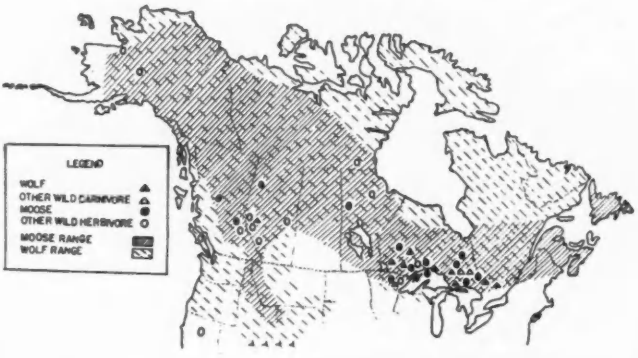

FIG. 2. Ranges of moose and wolves and distribution of wild animals infected with *Echinococcus granulosus**

the Keewatin District. Green (1949) found a 5.3% incidence in wapiti, *Cervus canadensis.* Cameron (1923) reported an hydatid infection in one of 250 bison, *Bison bison,* examined. Hydatid cysts were reported in the lungs of reindeer, *R. tarandus,* by Hadwen and Palmer (1922) and by Hadwen (1923).

Schiller and Rausch (1950) found a 2.4% incidence of hydatid cysts in tundra voles, *Microtus oeconomus,* in Alaska. This parasite was not found in 28 brown lemmings, *Lemmus trimucronatus,* at Cambridge Bay, Victoria Island, N.W.T., while the writer was participating in the Northern Insect Survey, nor in 39 red-backed mice, *Clethrionomys gapperi,* at Chapleau, Ontario, where the parasite has been found in other animals.

Hydatid cysts were found in the liver of a cat by Osler (1882), who also reported in Quebec in 10 of 270 swine. A year later Osler and Clement (1883) found 31 cysts in 1037 swine. Bruce (1930) reported it in British Columbia, and in 1938 Dr. A. M. Fallis (unpublished) collected cysts from the liver of a pig in Ontario. Dr. A. A. Kingscote, Ontario Veterinary College, advised me that he found cysts in a horse on Manitoulin Island. He also submitted records of an infection in the liver of a pig from Halton County, Ontario, and one from Brockville, Ontario. The latter was reported to him by Dr. C. C. Stewart. Dr. L. Seghetti, Montana State College, and Dr. F. M. Couey, Department of

*See footnote on page 481.

Fish and Game, submitted a record of an infected cow in Montana. A low incidence in domestic animals in North America is indicated by the summary given by Dikmans (1945).

The human cases reported by Magath (1950) in Canada occurred for the most part in immigrants who probably acquired their infection outside the country. More recently, as facilities for making chest x-rays have become available to people living in northern areas, an increase has been noted in the number of cases among native Canadians. I am grateful to Drs. Tennant, Falconer, Moore, and Ritchie for placing 21 unpublished case histories at my disposal. The distribution of these cases, as well as the single case published by Bartlett (1948), is shown in Fig. 1. Records of human infections presumably acquired in this country are plotted at the site where the patients were living at the time of diagnosis. Canadians who may have acquired the infection outside Canada are not plotted, although there are records from Quebec (Mercier, 1900), Manitoba (Lyon, 1902), and Ontario (Magath, 1921). Four of the livestock records are plotted, but the exact localities are not known for the others.

The site of encystment of the parasite in man and other animals was compared using published data and those obtained from our examinations of wild animals (Table I). It is apparent that the parasite was encysted more often in the lungs of wild herbivores than in any other site, but in human infections the liver was involved most frequently. The cysts in domestic animals have been reported more often in the lungs than elsewhere (Ross, 1926; Dévé, 1936; Boero, 1950).

TABLE I*

LOCATION OF HYDATID CYSTS IN TISSUES

Host	*Liver*	*Lung*	*Other or not stated*
Man	81	27	37
Moose	4	37	12
Deer	1	9	2
Wapiti	—	57	—
Caribou	—	4	—
Reindeer	—	some	—
Bison	1	—	—
Vole	—	—	14[1]

Discussion

It is apparent that *E. granulosus* has a widespread distribution in North America in areas that are inhabited by moose and wolves. It is most probable, as additional records become available, that this parasite will be reported from all areas where the ranges of moose and wolves overlap. It is assumed usually that human infections are acquired from close association with infected dogs. Infection in dogs in many countries is associated with a high infection in other domestic animals (Ross, 1929; Faure, 1949; Anon, 1950; Sorour, *et al.*, 1951). The available evidence in Canada suggests that the parasite is relatively rare in cattle, horses, and swine. This is in contrast to the widespread distribution among certain wild animals. The moose and wolf are the important

*Data for this table have been taken from various sources acknowledged in the text.
[1]Some of these occurred in the liver, but the exact number is not given.

reservoir hosts of this parasite in North America and the distribution of these animals is shown in Fig. 2. Data for this map were compiled from Peterson (1950), Goodwin (1924, 1929), Anderson (1939, 1943), Smith (1940), Young and Goldman (1944), Burt (1946) and Morris (1948). There are no records of infection in moose where wolves are absent (Fig. 2). The parasite occurs in other wild animals, although they would appear to be of less importance in maintaining the infection.

It is evident that human cases have occurred in localities close to moose and wolf populations. Most of these were diagnosed as a result of chest x-ray services, but since this parasite has been recorded more frequently in the liver of man than in the lungs, it is probable that many cases have been overlooked. It is conceivable that the human infections were acquired as a result of handling infected wolves, but more probably from contact with dogs that had eaten infected carcasses of moose or more rarely some other wild herbivore.

Dogs found in the vicinity of hunting lodges are in danger of becoming infected. If transported to farming districts in southern Canada these animals could act as a source of infection for both humans and farm animals. Precautions should be taken to prevent an increase of hydatid disease in Canada that may result from increased contacts between man, dogs and infected wild animals.

ACKNOWLEDGMENTS

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A NATIONAL WEIGHT-HEIGHT SURVEY

COMPREHENSIVE figures of weight for height and age based specifically on Canadian statistics are not available. The familiar tables printed in text books, in calendars, on scales, in insurance folders, in pamphlets, and in doctors' note-books, are based on studies from other countries, carried out, for the most part, many years ago, on limited numbers of people.

In short, it has never been possible to say to a Canadian child or adult: "Your weight corresponds well (or poorly) with the average Canadian weight for your height and age." This short-coming of all present tables of "standard" weights for height and age is seldom mentioned or even realized. Thousands of hours are spent every year in weighing and measuring school children, or industrial employees, or individual patients, or insurance applicants, without any thought for this basic limitation of comparing someone against a standard that never was representative of his own broad group.

Other aspects of "standard" tables of weights have received a good deal of attention both in the United States and the United Kingdom. Measurements, such as sitting height, bi-acromial, bi-iliac, calf circumference, etc., have been suggested as useful refinements and additions to the usual measurements. From these extra measurements various "indices" have been worked out, including Pryor's width-height tables, the Ponderal Index, Tuxford's Index and the Wetzel Grid, to mention only a few. All these extra measurements or refinements of simple tables of weight for height and age suffer to some degree from the same basic defect mentioned before. Their representativeness is open to question, and a person is thus not compared with his own group.

While growth is occurring, this weakness is serious only at the first measurement, since it has long been recognized that a child's weight is best compared with his own weight at a previous time. This does not imply that a child must always gain weight or gain at a specified rate, such as claimed in the Wetzel Grid, since proof that this is "healthier" is not available.

Renewed recognition is being given to weight as an index of some aspects of nutritional status and health. Unfortunately, confusion is developing from the use of widely varying "standard" tables. Many insurance companies publish

their own tables, and these become used in ways not originally intended. New text books are appearing with tables 40 years old, even though statistics show the average recruit in World War II was about 1½ inches taller and 9 pounds heavier than in World War I. Revisions of older tables in the light of recent data from limited groups of people have made it difficult to find any basis for some of the figures in currently used tables.

Several international groups have, in the last year, recommended that each country should gather data for a representative table of average weights for height and age. Canada is one of the first countries to accept the recommendations of the Civil Defence Conference, the World Health Organization, and the Food and Agriculture Organization. At a recent meeting the Dominion Council of Health approved preliminary steps being taken by the Bureau of Statistics and the Department of National Health and Welfare to obtain data for a truly National Weight-Height-Age Table. Plans are for field work to begin in 1953.

L. B. Pett, Ph.D., M.D.

BOOKS

Heredity in Uterine Cancer.

By Douglas P. Murphy, M.D., F.A.C.S. Publishd for The Commonwealth Fund by Harvard University Press, Cambridge, Mass., 1952. 128 pp. $2.75.

THE AUTHOR presents here a review of the pertinent literature, the details of materials and methods used in his own investigation, the findings of that investigation and the conclusions.

The conclusions are briefly:

1. "The evidence supports the conclusion that hereditary factors affect the frequency with which cancer appears in the uterus." . . . "The quantitative effect of heredity, as measured here, is small."

2. "The present study indicates that the factors which predispose to uterine cancer do not predispose in any significant degree to cancer in other sites."

3. "The results of this study indicate that hereditary factors, other than those concerned with uterine cancer, play a role in the etiology of cancer elsewhere in the body. Whether these factors influence the incidence of cancer in specific sites, or in all sites (other than in the uterus) is unknown."

Anyone interested in the question of heredity in relationship to cancer should have this book.

N. E. McKinnon

An Introduction to Acarology.

By Edward W. Baker and G. W. Wharton. New York and Toronto: The Macmillan Company, 1952. 465 pp. $10.00.

THIS BOOK is the first comprehensive study on Acarina published in English. It is a valuable contribution to the knowledge of this vast and important group of arthropods. Acarina are found everywhere from the Arctic to the tropics, living in the soil, moss, bodies of fresh water, oceans, and even in thermal springs. Numerous species are parasitic in or on the vertebrates and invertebrates, pests of crops and fruit trees, or infesting products in storehouses, thus causing great economic losses.

Ticks and mites are of great importance to the medical and veterinary professions because they are vectors of rickettsial, spirochaetal, bacterial and viral diseases of man and domestic animals. Some mites are parasitic in the skin or respiratory passages of man and animals, and others are known as intermediate hosts for certain species of tapeworms and protozoa.

This book has eight chapters. The first gives a short history of Acarina followed by the methods used for collecting and mounting the specimens and a short description of the morphological characteristics. Each of the other chapters gives a description of a suborder, key to the family, a list of the genera and type species of the genus. Line drawings are given for a member of each family. Each chapter is followed by a list of important references. The book has a complete index.

This book is a valuable guide to medical and veterinary scientists and biologists in the various fields of biological sciences.

E. Kuitunen-Ekbaum

The Parasites of Domestic Animals.

By Thomas W. M. Cameron. London: Adam & Charles Black, 1951. Toronto: The Macmillan Company of Canada Limited. 420 pp. $7.35.

THIS BOOK is a revised edition of "The Internal Parasites of Domestic Animals", published in 1934. Three new chapters have been added which include one on the Principles of Prevention of Helminthic Diseases and External Parasites, describing leeches and arthropods of veterinary importance. The chapter on Technique has been enlarged by the inclusion of entomological technique. The chapter on Arthropods is well illustrated by excellent drawings. The chapter on Therapeutics is brought up-to-date by the addition of phenothiazine as an anthelmintic in the treatment of various species of parasites in sheep, cattle, horses, pigs, and poultry. The dosage and method of administering the drug to the different animals is given.

The book as a standard text in many veterinary colleges will be of much greater value in its new, enlarged edition.

E. Kuitunen-Ekbaum

Parasitic Animals.

By Geoffrey LaPage. New York: Cambridge University Press, 1952. Toronto: The Macmillan Company of Canada Limited. 351 pp. $4.00.

THE AUTHOR gives a vivid description of parasitic animals and their mode of life; the effect of parasitism upon the parasite and upon the functions and resistance of the host. Many descriptive examples are given of how the parasitic mode of life has altered the structure and functions of parasitic animals. Frequently the biological functions of a parasite are intimately correlated with those of the host, in order to ensure the survival of the parasite. In the final chapter the author describes how the animals try to avoid the parasites and various methods and means by which man is able to control or eradicate the parasites which infect human beings or domestic animals.

The book is illustrated by numerous photographs and drawings of various parasites. The diagrams of the life histories are drawn in a clear and informative way.

The book is equally interesting to the general reader and the scientist. It contains much useful and valuable information for medical and veterinary personnel as well as for students of biology and especially for those engaged in parasitological studies.

E. Kuitunen-Ekbaum

Antibiotics—A Survey of Their Properties and Uses.

By S. J. Edwards, A. Kekwick, F. A. Robinson, G. Sykes, and B. J. Thomas. London: The Pharmaceutical Press. Toronto: McClelland and Stewart Ltd. 290 pages. 25s.

THIS BOOK is intended for physicians in general practice, veterinary surgeons, and pharmacists. More than half of it deals with the history, chemistry, assay, stability, and experimental background of the commoner antibiotics. The remainder covers briefly their use in medical and veterinary practice; pharmacy and pharmaceutical preparations are given in some detail. For more extensive reading, each chapter has a serviceable bibliography.

Although intended for use in Great Britain, most of the material should be equally applicable on this continent and will serve to give those in general practice a grasp of the basic information necessary for the intelligent use of antibiotics.

Frieda H. Fraser

A Translation of Galen's Hygiene (De Sanitate Tuenda).

By Robert Montraville Green, M.D. Springfield, Illinois: Charles C Thomas, 1952. Toronto: The Ryerson Press. 277 pp. $7.00.

THIS IS the first translation into any modern language of Galen's *De Sanitate Tuenda*. It is a masterpiece of classic medical antiquity and will be most useful for anyone interested in Galen's concept of hygiene. It serves not only as an important source of the history of medicine but also of the history of ancient civilization.

M. H. Brown

Diagnostic and Experimental Methods in Tuberculosis.

By Henry Stuart Willis, M.D., and Martin Marc Cummings, M.D. Springfield, Ill.: Charles C Thomas, 1952. Toronto: The Ryerson Press. 2nd ed. 373 pp. $12.50.

THIS IS a very comprehensive outline of the laboratory and experimental aspects of tuberculosis. This edition has been almost completely rewritten. The newer methods in diagnosis and chemotherapy are discussed, including the testing for sensitivity to the newer antibiotics. The medical student will find this of value both before and after graduation. It is also a valuable guide to anyone doing diagnostic laboratory or research work on tuberculosis.

The illustration on page 164 would seem to be the result of the intradermal application of BCG rather than multiple-puncture technique as indicated. The reference to the preparation of Old Tuberculin on glycerinated broth (page 190), instead of one of the recognized so-called synthetic media and the use of a control, does not seem to be in keeping with the up-to-dateness of the remainder of the text.

M. H. Brown